

REMARKS

This application pertains to a novel process for separating solid substances, present in dissolved or colloidal form from solutions in a nonaqueous solvent with the aid of a ceramic membrane.

The membrane used in Applicants' process has a hydrophobic coating. The hydrophobic coating is produced on the membrane by treatment with silanes (page 4, line 7). The silanes used are those of the general formula $R_1R_2R_3R_4Si$, wherein at least one but at most three of the groups R_1 to R_4 are hydrolyzable groups, e.g. $-Cl$, $-OCH_3$ or $-O-CH_2-CH_3$ and/or at least one but at most three of the groups R_1 to R_4 are nonhydrolyzable groups, e.g. alkyl groups or phenyl groups.

Claims 1, 2 6-8, and 10-17 are pending.

Claims 1-4 and 7-14 stand rejected under 35 U.S.C. 112 first paragraph, as failing to comply with the written description requirement.

In response to the office action dated December 12th 2008, Applicants have amended Claim 1 by (i) introducing the inorganic membrane having a pore size of 2-5 nm and also (ii) the membrane having retention of less than 1000 g/mol.

Support for amendment (i) is found in para [0021] of the written description of the published application. Support for amendment (ii) is found in para [0017].

Furthermore the examiner contends that there might be support for 500 to 1000 g/mol retention with membranes having a coating such as silanes, but purely ceramic membranes would not find support in the description.

Applicants respectfully point out that the membrane according to current claim 1 does comprise "a hydrophobic coating (...) with a silane".

For the avoidance of further misunderstandings of Applicants' Claims, Applicants have additionally amended Claim 1 to recite that the "hydrophobically coated" membrane has a retention of less than 1000 g/mol. Support for that amendment is again found in para [0017] ("rendered hydrophobic").

Thus the objection of the examiner as to his points (1) to (3) in the office action dated April 7th 2009 lack reasonable basis (See also MPEP 2163 II. A.).

In addition Applicants have amended Claim 6 to depend from Claim 1 instead of Claim 5, which has previously been canceled. Support for that amendment is found in the originally filed Claims.

The rejection of claims 1-4 and 7-14 under 35 U.S.C. 112 first paragraph should accordingly now be withdrawn.

Claims 1, 2, 4-8, 10, 11 and 15-17 stand rejected under 35 USC § 103(a) as being unpatentable over Karau et al. (US 6,472,517).

Besides and in addition to all further remarks made in response to previous office actions the Examiner's attention is respectfully drawn to the fact that according to applicants invention it's not only that the asymmetric membrane employed comprises at least three ceramic layers which is, in accordance with the opinion of the Examiner, not explicitly disclosed by the Karau et al. reference, but further that these at least three ceramic layers each exhibit a pore size different from each of the others.

According to the Karau et al. reference the pore diameter of all pores in the inorganic separation layer should be greater than 0.1 nm (preferably greater than 0.4 nm). In addition thereto the pores of the "interlayer" shall have pore sizes of less than 200 nm (preferably less than 10 nm, most particularly preferably less than 1 nm) (see Col. 4, lines 1-8).

Hence, the pore size range of the "interlayer" is – at maximum – from greater than 0.1 nm to less than 200 nm and – at minimum – from greater than 0.4 nm to less than 1 nm.

From the foregoing it's apparent, that according to the disclosure of the Karau et al. reference only the pore sizes of the "interlayer" are specified to be of any importance. The abstract cited by the Examiner (col. 4, lines 9-15), relates to the "backing layer" which, according to the Karau et al. reference (col. 2, lines 37-42), is different to the "interlayer".

Accordingly, there is one "backing layer" and one or more "interlayer", all of the later having the aforesaid pore sizes and thus, even if one would imply that the "backing layer" has a different pore size than the one or more "interlayer" which is neither explicitly disclosed nor suggested to be of advantage, one would never be able to read the Karau et al. reference to teach or suggest at least three ceramic layers, each having a different pores size than the other two layers.

Applicants appreciate that the Examiner has now found distinction between a "layer" of the membrane and the coating thereon, which can not be considered to be a "layer".

Hence, nothing in Karau et al. would teach or suggest the use three ceramic layers having different pore sizes.

Accordingly, no person reading Karau et al. could ever arrive at Applicants' novel process, and the rejection of claims 1, 2, 4-8, 10, 11 and 15-17 under 35 U.S.C. 103(a) as obvious over Karau, et al (US 6,472,571) should now be withdrawn.

Claims 12-14 stand rejected under 35 U.S.C. under 35 U.S.C. 103(a) as obvious over Karau as applied to claim 2 above. and further in view of WO 01/07157.

As pointed out above, the Karau et al. reference uses a completely different membrane, and neither teaches nor suggests the changes that would be required to arrive at Applicants' process.

The further rejection of Claims 12-14 of Applicants invention is founded on the presumption of the Examiner, that the membrane employed in Applicants Claim 1 is an obvious variation of the membrane disclosed by the Karau et al. reference, which has been proven above to in fact not be the case.

Accordingly the combination of WO with the disclosure of the Karau et al. reference "to extend the use (...) for the catalysts" can never render Applicants invention as claimed in Claims 12-14 obvious.

It can therefore be seen that no combination of Karau et al. and the WO reference could ever lead to Applicants novel membrane, and the rejection of claims 12-14 under 35 U.S.C. under 35 U.S.C. 103(a) as obvious over Karau as applied to claim 2 above. and further in view of WO 01/07157 should now be

withdrawn.

In view of the present amendments and remarks, it is believed that claims 1, 2 6-8, and 10-17 are now in condition for allowance. Reconsideration of said claims by the Examiner is respectfully requested, and the allowance thereof is courteously solicited.

CONDITIONAL PETITION FOR EXTENSION OF TIME

If any extension of time for this response is required, Applicants request that this be considered a petition therefor. Please charge the required petition fee to Deposit Account No. 14-1263.

ADDITIONAL FEE

Please charge any insufficiency of fee or credit any excess to Deposit Account No. 14-1263.

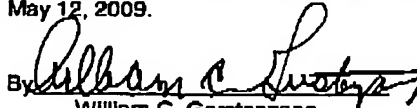
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I hereby certify that this correspondence is being transmitted via facsimile, no. 571-273-8300 to Mail Stop Amendment, United States Patent and Trademark Office, addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on May 12, 2009.

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